



Tightening automation.
Only excellent solutions.



Multispindle tightening units

Fiam

PEOPLE AND SOLUTIONS

Fiam multispindle tightening units: all needs will be satisfied

Tightening simultaneously and accurately more screws, bolts, nuts has never been easier.

Completely designed and manufactured by Fiam, multispindle tightening solutions can foresee:

TWO OR MORE SPINDLES

to tighten two or more screws, bolts, nuts **simultaneously and accurately** (at the same torque and depth)

USE OF DIFFERENT TYPES OF INDUSTRIAL MOTORS

to choose, depending on the application and type of joint and screw, between solutions **with air motors without clutch** or with **air shut-off motors** up to high technology solutions with **DC nutrunner motors**

AXIAL COMPENSATION

to eliminate height difference of the screws on the component (during tightening)

FIXED OR VARIABLE DISTANCE TO THE CENTRE

to tighten different components with a **single multispindle unit, changing only the position of the spindles** depending on the different distance to centre (distance of the screws on the component)



Multispindle unit with variable distance to centre equipped with optical device for distance to centre measurement

Be demanding

Reliability

The air nutrunner motors are completely **designed and manufactured by Fiam. They guarantee the correct immediate functioning also at low air feed pressure**

The air nutrunner motors, manufactured with high durability materials, render multispindle tightening units **extremely sturdy**, guaranteeing high **reliability for hundreds of thousands of cycles**

High technology electric solutions with **DC nutrunner motors** are available: to monitor and control the assembly cycles and to assure high quality assembly operations

All solutions are designed and manufactured according to customer's requirements and are **carefully tested** to guarantee correct functioning

Besides eliminating the height difference of the screws on the component, the **axial compensation**, eases the approach of the spindles on the screw, reduces the axial thrust on the mechanical part of the motor preserving components from wear and tear

Depending on the complexity of the tightening cycle, **the changement of the distance to centre can take place manually, pneumatically or electronically**

Customized solutions to **tighten screws positioned on different heights** are available

All solutions can be equipped with **light devices for monitoring or controlling** the working cycle

Punctual, reliable and customized after-sale services

FIAM NUTRUNNER MOTORS: TIGHTENING CORRECTLY RESPONDING TO EVERY NEED

AIR NUTRUNNER MOTORS WITHOUT CLUTCH

These motors with direct and continuous drive of the torque guarantee tightening evenness also in presence of extremely soft joints (for example in assembly of steel components with interposed rubber seals of significant thickness).

NUTRUNNER MOTORS WITH SLIP CLUTCH (UNI JOINTECH)

The use of these motors is extremely versatile because their torque control device with slip clutch is suitable for different types of materials.

NUTRUNNER MOTORS WITH AIR SHUT-OFF JOINTECH PLUS

Thanks to the automatic and immediate air shut-off device, these motors guarantee high torque repeatability.

To be used with components manufactured with high quality materials (for example in assembly of car components).

BRUSHLESS ELECTRIC NUTRUNNER MOTORS WITH COMPUTERIZED CONTROL (CURRENT CONTROL OR TORQUE/ANGLE CONTROL)

They are fundamental when it is necessary to control, monitor and check the whole tightening process (to memorize the tightening datas).

For further information about the features and the advantages of Fiam nutrunner motors see our catalogues on web site www.fiamairtools.com

Don't be satisfied with the maximum

Productivity

Strong reduction of the cycle times thanks to the possibility to **tighten simultaneously and accurately more screws, bolts, nuts**

The solutions guarantee maximum output and long lifetime

Possibility to **customize the motors** according to the type of joint and application

The solutions can be designed **with or without protection cover, to be positioned on existing production lines**

Extremely compact and easy to handle, they are user-friendly for the operator

Semi-automatic and automatic solutions with **automatic screw feeding** to optimize cycle times are available



Perfection
is in your hands

Ergonomics

The solutions are designed considering productive layout and workplaces with the aim to realize **perfectly functional solutions and to eliminate every risk factor for the operator**

Effective suspension systems are studied and used for every solution; they completely annulate the unit's weight for perfect operator handling

The multispindle tightening unit can work both **in vertical and horizontal axis**, depending on the workpiece to be assembled. Also it can turn around its axis to optimally position itself in respect to the workpiece to be assembled

All pneumatic solutions can use motors equipped with **effective silencing systems**

Fiam is also able to train operators with **operating suggestions with the aim to eliminate all ergonomically incorrect behaviours**

Naturally innovative

Ecology

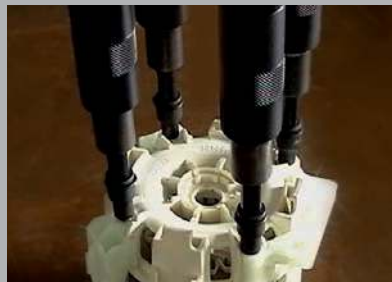
The advanced technological design of the Fiam nutrunner motors permits very **high decrease of compressed air consumption**, without affecting solution performance

All the components are **easy to dispose of** because they are built using recyclable materials; therefore they do not represent any danger for environmental pollution

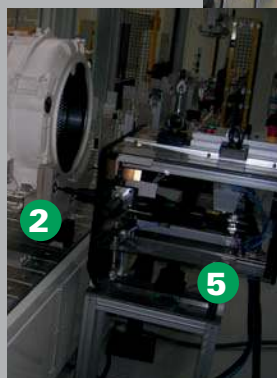
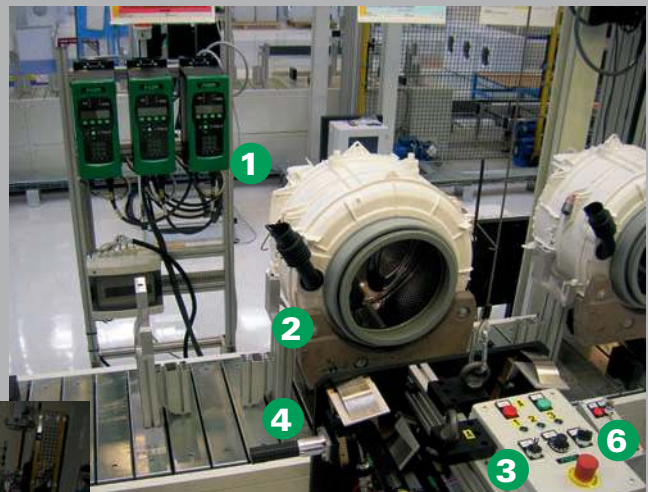
All pneumatic solutions are equipped with oil separator filters for conveying the exhaust air, guaranteeing **absence of oil mist into the environment, thus safeguarding working environment**

All Fiam products are supplied with **eco-friendly packaging**

For electrical multispindle tightening units, **eco-contribution WEEE** is acquitted: Fiam fulfils its manufacturer obligations with respect for the environment and without any costs for the customer

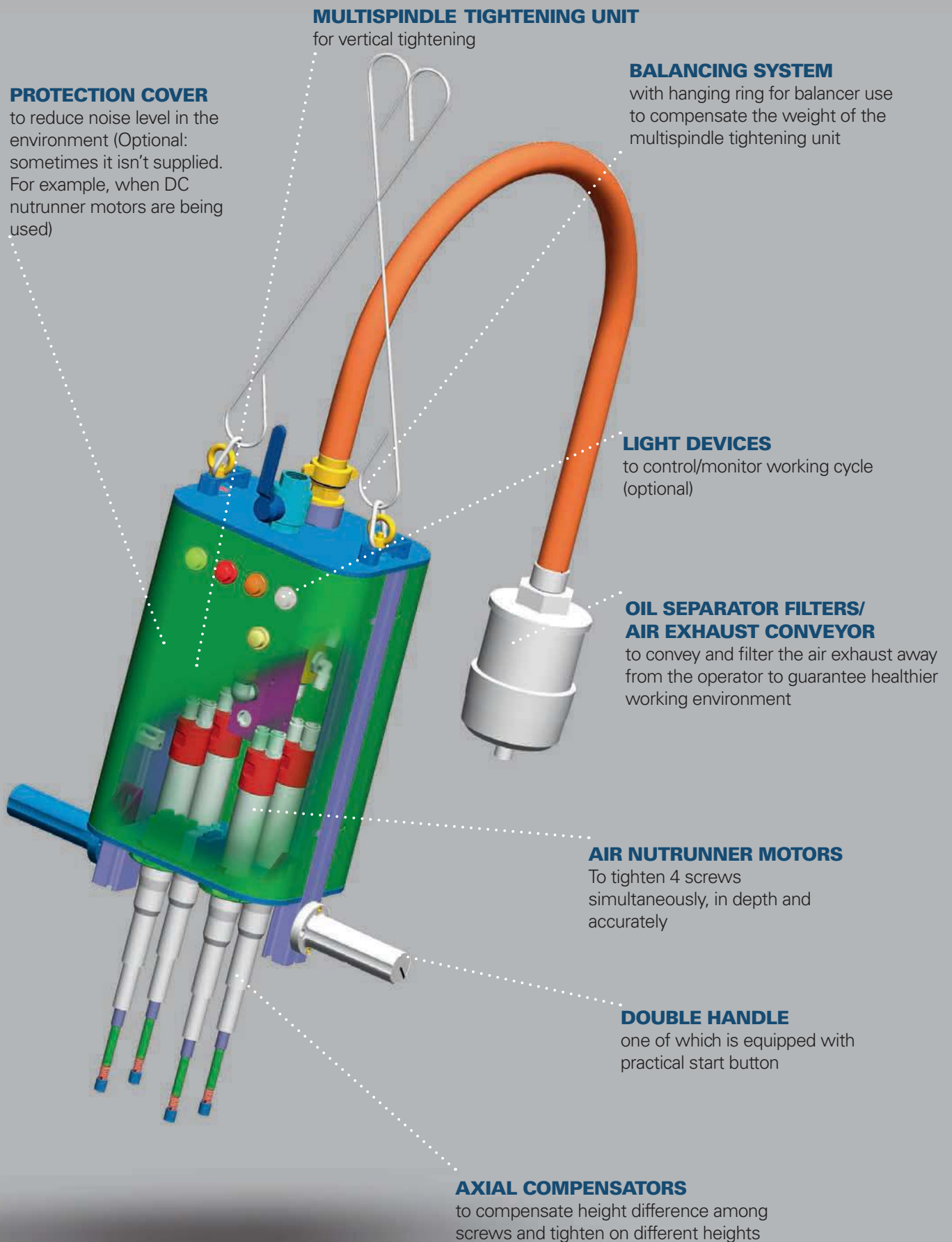


Example of multispindle tightening unit, manufactured for **appliance components**, equipped with **computerized controlled electric nutrunner motors**



- 1 Feed and computerized control unit
- 2 Workpiece to be assembled
- 3 Multispindle unit with electric nutrunner motors with computerized control
- 4 Grip: the multispindle unit is positioned on the running slide (5) which comfortably and easily guides the multispindle tightening unit on the workpiece to be tightened
- 5
- 6 Control panel for the selection of the tightening programmes and for visualization of the assembly results

Example of multispindle tightening unit



How to order a customized multispindle tightening unit

To receive quickly a budget offer, complete the following form and send it by fax +39 0444 385002 or e-mail customerservice@fiamairtools.com
For further information, please contact Fiam Technical Service.

Number of spindles _____ Type of motor pneumatic electric
Fixed distance to centre Dimensions mm _____ Variable distance to centre Dimensions from mm _____ up to mm _____
(enclose workpiece drawing)

Screws Features

Heads	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	
	Flat countersunk		Cylindrical		Oval		Hexagonal		Oval countersunk		Oval cylindrical	
Imprints	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	
	Phillips	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 Other _____	Pozidrive	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 Other _____	Slotted	Depth _____ mm	Hex socket screws	CH _____ mm	Torx	Male (T) _____ Female (E) _____	Hex	CH _____ mm

Dimensions of the screws

<input type="checkbox"/> Standard screw		D = _____ mm H = _____ mm L = _____ mm d = _____ mm	<input type="checkbox"/> Screw with knurled washer under the head		D = _____ mm H = _____ mm L = _____ mm s = _____ mm d = _____ mm h = _____ mm d' = _____ mm	<input type="checkbox"/> hex. mm		B = _____ mm CH (socket) _____ mm	<input type="checkbox"/> hex mm		C (hex.) = _____ mm D (TOT.) = _____ mm
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Tightening type

Torque: _____ Nm	Workpiece material	Cycle
Accuracy: _____ %	<input type="checkbox"/> Wood	Quantity of screws/workpieces _____
Speed: _____ Rpm	<input type="checkbox"/> Plastic	Nr. pieces/hour _____
Tightening axis	<input type="checkbox"/> Aluminium	
<input type="checkbox"/> Horizontal	<input type="checkbox"/> Steel	Ergonomic auxiliary equipment
<input type="checkbox"/> Vertical	<input type="checkbox"/> Iron	<input type="checkbox"/> with balancer
<input type="checkbox"/> From bottom towards the top	<input type="checkbox"/> Treatment of the screw _____	<input type="checkbox"/> with manual descent on guiding pillars and balancer
<input type="checkbox"/> Other: _____ degrees	<input type="checkbox"/> Ref. Standard _____	<input type="checkbox"/> with descent on pneumatic slide
	<input type="checkbox"/> Other _____	

Other detail

Particular solutions in order to not damage the piece:	<input type="checkbox"/> no	<input type="checkbox"/> yes	nr. _____
Feeding pressure in line:	<input type="checkbox"/> 6,3 Bar	<input type="checkbox"/> other:	nr. _____
FRL-Group (Filter, pressure regulator, lubricator)	<input type="checkbox"/> no	<input type="checkbox"/> yes	
Feeding tension:	<input type="checkbox"/> 220V, 50Hz	<input type="checkbox"/> other:	nr. _____
Screws positioned on different levels:	<input type="checkbox"/> no	<input type="checkbox"/> yes	mm _____
Screws samples sent*:	<input type="checkbox"/> no	<input type="checkbox"/> yes	nr. _____ (quantity)
Workpiece samples sent:	<input type="checkbox"/> no	<input type="checkbox"/> yes	nr. _____ (quantity)
Rotation:	<input type="checkbox"/> clockwise	<input type="checkbox"/> anticlockwise	<input type="checkbox"/> reversible
Telescopicity on spindle:	<input type="checkbox"/> no	<input type="checkbox"/> yes	<input type="checkbox"/> mm _____
Light warning/control devices:	<input type="checkbox"/> no	<input type="checkbox"/> yes	<input type="checkbox"/> _____
Type of starting system (button):	<input type="checkbox"/> single	<input type="checkbox"/> double	<input type="checkbox"/> other: _____
Multispindle tightening unit suspended on:	<input type="checkbox"/> balancer	<input type="checkbox"/> arm	<input type="checkbox"/> column
Workpiece jig:	<input type="checkbox"/> no	<input type="checkbox"/> yes	distance from unit: mm _____
Tightening cycle time required (seconds):	<input type="checkbox"/> no	<input type="checkbox"/> yes	
Installation on production site:	_____		
Filled-in by _____	Function _____	Date _____	
Company _____	Tel. _____	E-mail _____	

*Without screws or in case incomplete information is being received, Fiam offer has to be considered purely indicative.



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Quality Management
System Certificate



Environmental Management
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